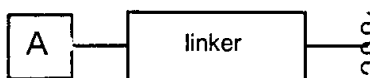


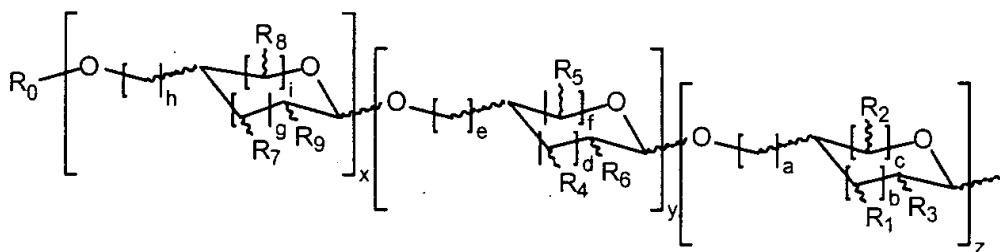
## 2) Additions to Claims:

Please cancel claims 27-32 and 39 and add the following new claims:

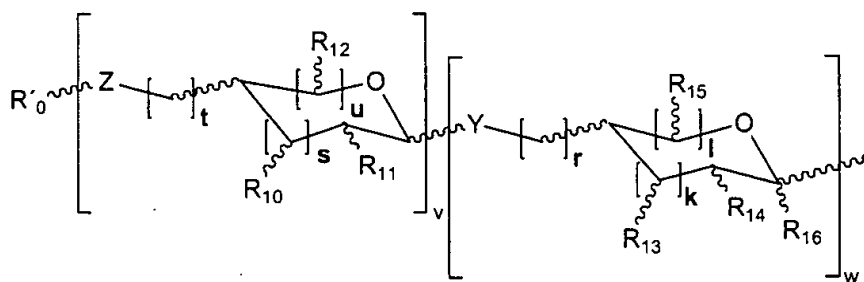
56. A multi-antigenic glycopeptide comprising a peptidic backbone made up of two or more amino acids, wherein each of said amino acids is independently substituted with a glycosidic moiety having the structure:



wherein the linker is a substituted or unsubstituted aliphatic or heteroaliphatic moiety; each occurrence of A is a carbohydrate determinant having the structure:



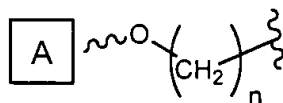
wherein a, b, c, d, e, f, g, h, i, x, y and z are independently 0, 1, 2 or 3, with the proviso that the x, y and z bracketed structures represent furanose or pyranose moieties and the sum of b and c is 1 or 2, the sum of d and f is 1 or 2, and the sum of g and i is 1 or 2, and with the proviso that x, y and z are not simultaneously 0; wherein R<sub>0</sub> is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> is independently hydrogen, OH, OR<sup>i</sup>, NHR<sup>i</sup>, NHCOR<sup>i</sup>, F, CH<sub>2</sub>OH, CH<sub>2</sub>OR<sup>i</sup>, a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of R<sup>i</sup> is independently hydrogen, CHO, COOR<sup>ii</sup>, or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group or a saccharide moiety having the structure:



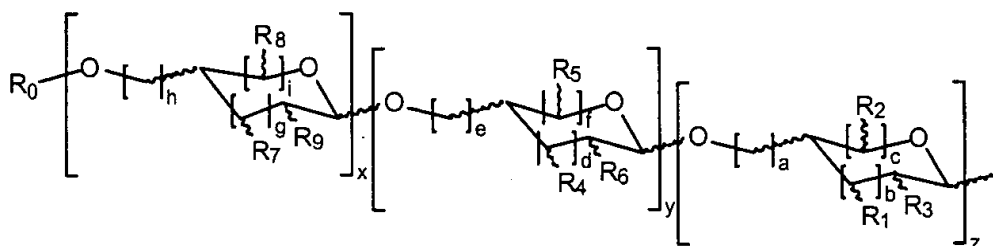
wherein Y and Z are independently NH or O; wherein k, l, r, s, t, u, v and w are each independently 0, 1 or 2; with the proviso that the v and w bracketed structures represent furanose or pyranose moieties and the sum of l and k is 1 or 2, and the sum of s and u is 1 or 2, and with the proviso that v and w are not simultaneously 0; wherein  $R'_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $R_{15}$  is independently hydrogen, OH,  $OR^{iii}$ ,  $NHR^{iii}$ ,  $NHCOR^{iii}$ , F,  $CH_2OH$ ,  $CH_2OR^{iii}$ , or a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R_{16}$  is hydrogen, COOH,  $COOR^{ii}$ ,  $CONHR^{ii}$ , a substituted or unsubstituted linear or branched chain alkyl or aryl group; wherein each occurrence of  $R^{iii}$  is hydrogen, CHO,  $COOR^{iv}$ , or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group; and wherein each occurrence of  $R^{ii}$  and  $R^{iv}$  are each independently H, or a substituted or unsubstituted linear or branched chain alkyl, arylalkyl or aryl group;

wherein each occurrence of n is independently 0-9, whereby, if for each occurrence of n, n = 0, at least one occurrence of A has a different structure from other occurrences of A.

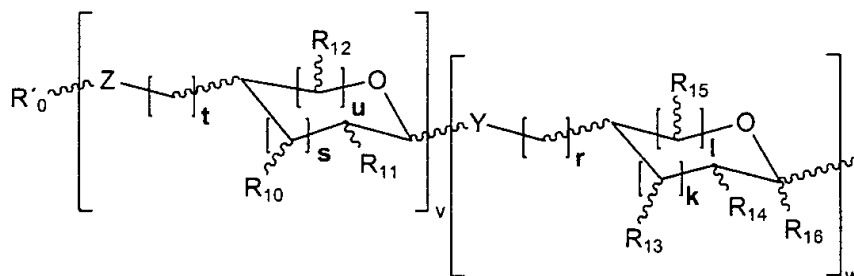
57. The multi-antigenic glycopeptide of claim 56 wherein one or more of said amino acids are substituted with an n-alkyl glycosidic moiety having the structure:



wherein each occurrence of A is a carbohydrate determinant having the structure:



wherein a, b, c, d, e, f, g, h, i, x, y and z are independently 0, 1, 2 or 3, with the proviso that the x, y and z bracketed structures represent furanose or pyranose moieties and the sum of b and c is 1 or 2, the sum of d and f is 1 or 2, and the sum of g and i is 1 or 2, and with the proviso that x, y and z are not simultaneously 0; wherein R<sub>0</sub> is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> is independently hydrogen, OH, OR<sup>i</sup>, NHR<sup>i</sup>, NHCOR<sup>i</sup>, F, CH<sub>2</sub>OH, CH<sub>2</sub>OR<sup>i</sup>, a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of R<sup>i</sup> is independently hydrogen, CHO, COOR<sup>ii</sup>, or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group or a saccharide moiety having the structure:



wherein Y and Z are independently NH or O; wherein k, l, r, s, t, u, v and w are each independently 0, 1 or 2; with the proviso that the v and w bracketed structures represent furanose or pyranose moieties and the sum of l and k is 1 or 2, and the sum of s and u is 1 or 2, and with the proviso that v and w are not simultaneously 0; wherein R'<sub>0</sub> is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of R<sub>10</sub>, R<sub>11</sub>, R<sub>12</sub>, R<sub>13</sub>, R<sub>14</sub> and R<sub>15</sub> is independently hydrogen, OH, OR<sup>iii</sup>, NHR<sup>iii</sup>, NHCOR<sup>iii</sup>, F, CH<sub>2</sub>OH, CH<sub>2</sub>OR<sup>iii</sup>, or a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of R<sub>16</sub> is hydrogen, COOH, COOR<sup>ii</sup>, CONHR<sup>ii</sup>, a substituted or unsubstituted linear or branched chain alkyl or aryl group; wherein each occurrence of R<sup>iii</sup> is hydrogen, CHO, COOR<sup>iv</sup>, or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group; and wherein each occurrence of R<sup>ii</sup> and R<sup>iv</sup>

are each independently H, or a substituted or unsubstituted linear or branched chain alkyl, arylalkyl or aryl group;

wherein the n-alkyl glycosidic moiety is either  $\alpha$ - or  $\beta$ -linked to an amino acid.

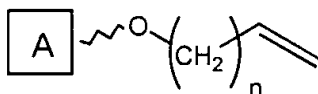
58. The glycopeptide of claim 56 or 57 wherein the glycopeptide is bound to a suitable carrier protein, peptide or lipid.

59. The glycopeptide of claim 58 wherein the carrier protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

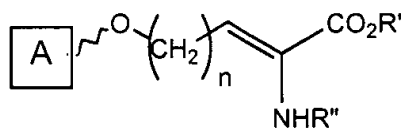
60. The glycopeptide of claim 58 wherein the lipid is tripalmitoyl-S-glycerylcysteinylserine.

61. The glycopeptide of claim 57 wherein the amino acids substituted with an n-alkyl glycosidic moiety are prepared by a process comprising steps of:

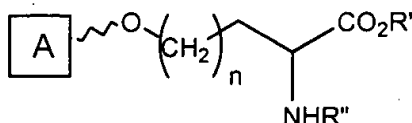
(a) providing an alkenyl glycoside having the structure:



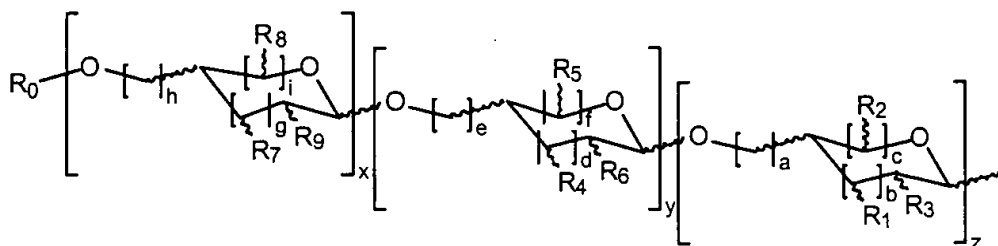
and reacting said alkenyl glycoside under suitable conditions to generate an enamide ester having the structure:



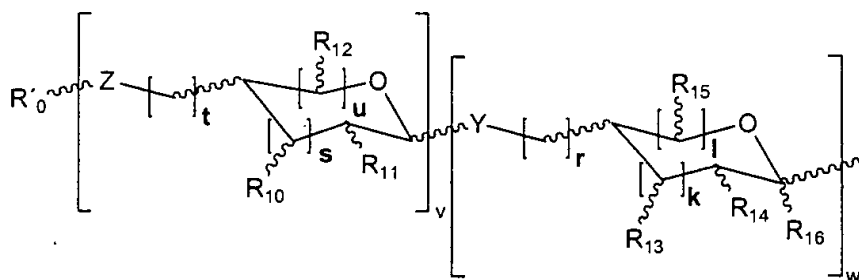
(b) reacting said enamide ester under suitable conditions to generate a glycoamino acid having the structure:



wherein, for each of the structures above, n is 0-9, wherein A is a carbohydrate domain having the structure:



wherein a, b, c, d, e, f, g, h, i, x, y and z are independently 0, 1, 2 or 3, with the proviso that the x, y and z bracketed structures represent furanose or pyranose moieties and the sum of b and c is 1 or 2, the sum of d and f is 1 or 2, and the sum of g and i is 1 or 2, and with the proviso that x, y and z are not simultaneously 0; wherein R<sub>0</sub> is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> is independently hydrogen, OH, OR<sup>i</sup>, NHR<sup>i</sup>, NHCOR<sup>i</sup>, F, CH<sub>2</sub>OH, CH<sub>2</sub>OR<sup>i</sup>, a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of R<sup>i</sup> is independently hydrogen, CHO, COOR<sup>ii</sup>, or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group or a saccharide moiety having the structure:

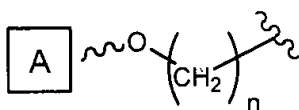


wherein Y and Z are independently NH or O; wherein k, l, r, s, t, u, v and w are each independently 0, 1 or 2; with the proviso that the v and w bracketed structures represent furanose or pyranose moieties and the sum of l and k is 1 or 2, and the sum of s and u is 1 or 2, and with the proviso that v and w are not simultaneously 0; wherein R'<sub>0</sub> is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of R<sub>10</sub>, R<sub>11</sub>, R<sub>12</sub>, R<sub>13</sub>, R<sub>14</sub> and R<sub>15</sub> is independently hydrogen, OH, OR<sup>iii</sup>, NHR<sup>iii</sup>, NHCOR<sup>iii</sup>, F, CH<sub>2</sub>OH, CH<sub>2</sub>OR<sup>iii</sup>, or a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or

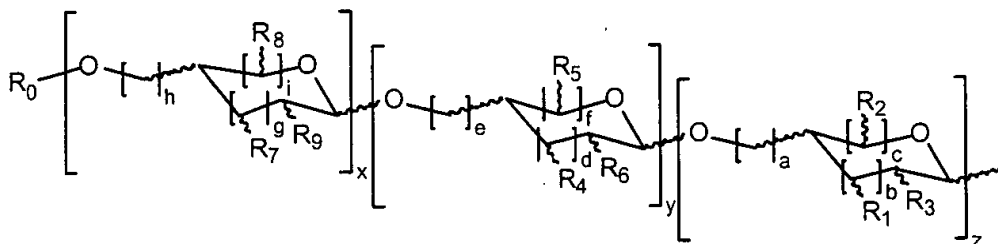
and wherein for the glycoamino acid structure R' and R" are each independently protecting group or hydrogen.

$$\text{AcHN} - \text{CH}(\text{R}_D, \text{R}_A) - \text{C}(=\text{O}) - \text{NH} - \text{CH}(\text{R}_B, \text{R}_E) - \text{C}(=\text{O}) - \left( \text{NH} - \text{CH}(\text{R}_C, \text{R}_F) - \text{C}(=\text{O}) \right)_m - \text{LINKER} - \left( \text{CROSSLINKER} \right)_q - \text{CARRIER}$$

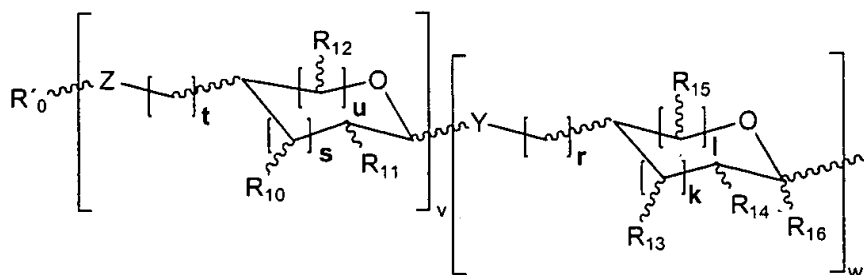
wherein each occurrence of R<sub>D</sub>, R<sub>E</sub> and R<sub>F</sub> is independently an alkyl glycosidic moiety having the structure:



wherein each occurrence of A is independently selected from a carbohydrate domain having the structure:



wherein a, b, c, d, e, f, g, h, i, x, y and z are independently 0, 1, 2 or 3, with the proviso that  $R_D$ ,  $R_E$  and  $R_F$  are carbohydrates independently comprised of furanose or pyranose moieties, and the sum of b and c is 1 or 2, the sum of d and f is 1 or 2, and the sum of g and i is 1 or 2, and with the proviso that x, y and z are not simultaneously 0; wherein  $R_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  is independently hydrogen, OH,  $OR^i$ ,  $NHR^i$ ,  $NHCOR^i$ , F,  $CH_2OH$ ,  $CH_2OR^i$ , a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R^i$  is independently hydrogen, CHO,  $COOR^{ii}$ , or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group or a saccharide moiety having the structure:



wherein Y and Z are independently NH or O; wherein k, l, r, s, t, u, v and w are each independently 0, 1 or 2; with the proviso that the v and w bracketed structures represent furanose or pyranose moieties and the sum of l and k is 1 or 2, and the sum of s and u is 1 or 2, and with the

proviso that v and w are not simultaneously 0; wherein  $R'_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $R_{15}$  is independently hydrogen, OH,  $OR^{iii}$ ,  $NHR^{iii}$ ,  $NHCOR^{iii}$ , F,  $CH_2OH$ ,  $CH_2OR^{iii}$ , or a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R_{16}$  is hydrogen, COOH,  $COOR^{ii}$ ,  $CONHR^{ii}$ , a substituted or unsubstituted linear or branched chain alkyl or aryl group; wherein each occurrence of  $R^{iii}$  is hydrogen, CHO,  $COOR^{iv}$ , or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group; and wherein each occurrence of  $R^{ii}$  and  $R^{iv}$  are each independently H, or a substituted or unsubstituted linear or branched chain alkyl, arylalkyl or aryl group;

wherein each occurrence of n is independently 0-9, whereby, if for each occurrence of n,  $n = 0$ , at least one occurrence of A has a different structure from other occurrences of A; and wherein the n-alkyl glycosidic moiety is either  $\alpha$ - or  $\beta$ -linked to an amino acid.

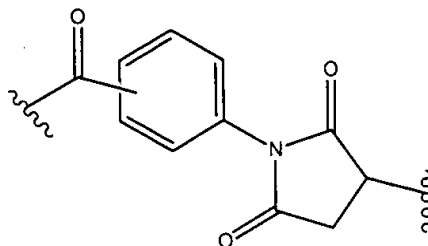
63. The construct of claim 62 wherein the linker is -O-,  $-NR_G$ -,  $-NR_G(\text{aliphatic})NR_J$ -,  $-NR_G(\text{heteroaliphatic})NR_J$ -,  $-(\text{aliphatic})NR_J$ -,  $-(\text{heteroaliphatic})NR_J$ -,  $-O(\text{aliphatic})NR_J$ -,  $-O(\text{heteroaliphatic})NR_J$ -,  $-NR_G(\text{aliphatic})NR_J(C=O)(CR_HR_I)_kS$ -,  $-NR_G(\text{heteroaliphatic})NR_J(C=O)(CR_HR_I)_kS$ -,  $-(\text{aliphatic})NR_J(C=O)(CR_HR_I)_kS$ -,  $-(\text{heteroaliphatic})NR_J(C=O)(CR_HR_I)_kS$ -,  $-O(\text{aliphatic})NR_J(C=O)(CR_HR_I)_kS$ -,  $-O(\text{heteroaliphatic})NR_J(C=O)(CR_HR_I)_kS$ -, an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester, wherein each occurrence of k is independently 1-5; wherein each occurrence of  $R_G$ ,  $R_H$ ,  $R_I$  or  $R_J$  is independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic moiety, or a substituted or unsubstituted aryl moiety, and wherein each aliphatic or heteroaliphatic moiety is independently substituted or unsubstituted, linear or branched, cyclic or acyclic.

64. The construct of claim 62, wherein the linker is -O-,  $-NR_G(CR_HR_I)_kNR_J$ -,  $-NR_G(CR_HR_I)_kNR_J(C=O)(CR_HR_I)_kS$ -,  $-NR_G$ -,  $-(CR_HR_I)_kNR_J$ -,  $-O(CR_HR_I)_kNR_J$ -, an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester, wherein each occurrence of k is independently 1-5, wherein each occurrence of  $R_G$ ,  $R_H$ ,  $R_I$  or  $R_J$  is



independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic moiety, or a substituted or unsubstituted aryl moiety.

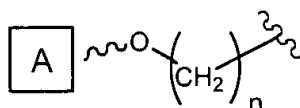
65. The construct of claim 62, wherein the crosslinker is a fragment having the structure:



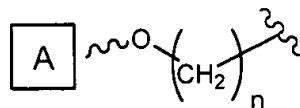
whereby said structure is generated upon conjugation of maleimidobenzoic acid N-hydroxy succinimide ester with a linker.

66. The construct of claim 62, wherein m is 1 and the construct has three occurrences of A comprising Tn, Globo-H and Le<sup>y</sup>.

67. The glycopeptide of claim 57 wherein the glycopeptide has six occurrences of the alkyl glycosidic moiety having the structure:



68. The construct of claim 62, wherein m is 4 and the construct has six occurrences of the alkyl glycosidic moiety having the structure:

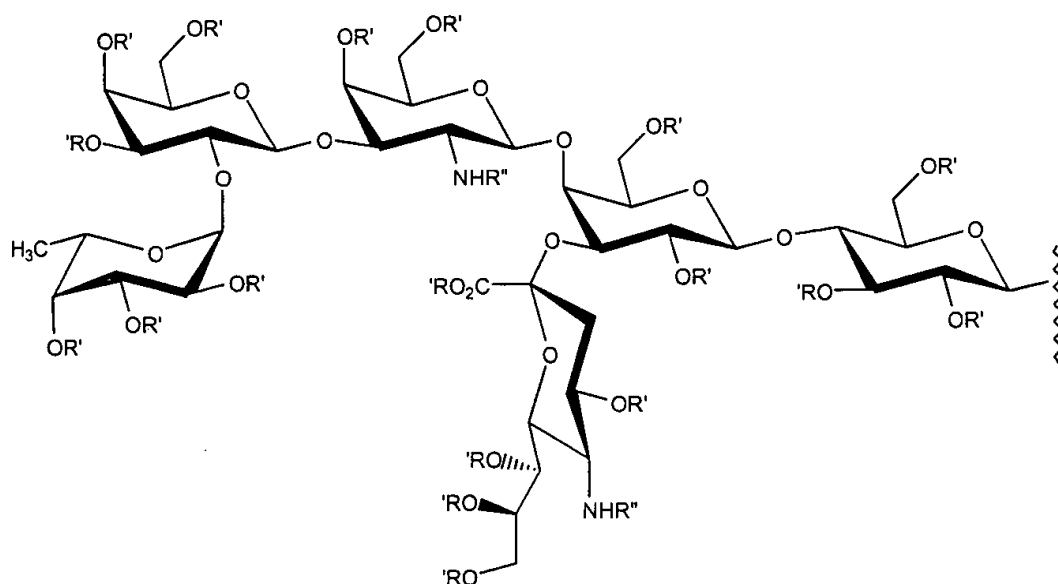


69. The glycopeptide of claim 57 or 67 or the construct of claim 62 or 68, wherein each occurrence of A is independently Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, or TF.

70. The construct of claim 62 or 68 wherein the carrier is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

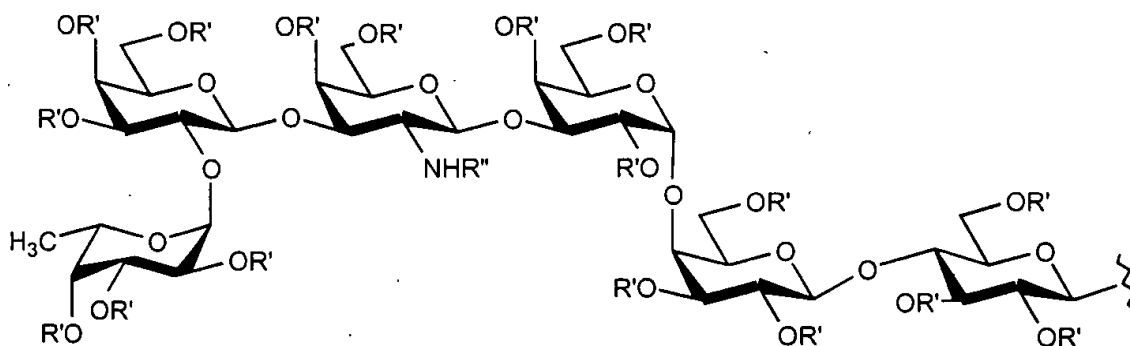
71. The construct of claim 62 or 68 wherein the carrier is tripalmitoyl-S-glycerylcysteinylserine.

72. The glycopeptide of claim 57 or 67 or the construct of claim 62 or 68, wherein at least one occurrence of A is a carbohydrate determinant having the structure:



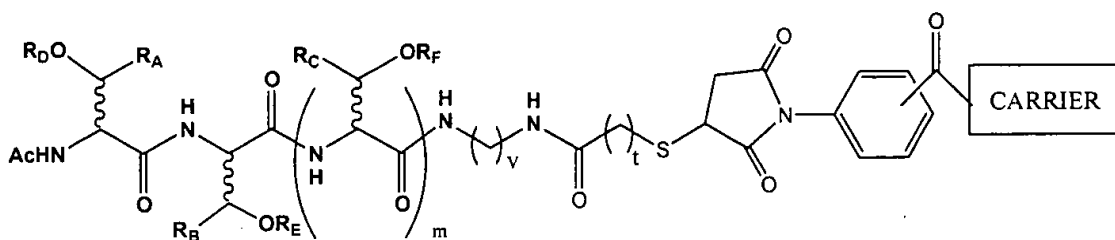
wherein each occurrence of R' is independently hydrogen or a protecting group; and  
wherein each occurrence of R'' is independently hydrogen or a nitrogen protecting group.

73. The glycopeptide of claim 57 or 67 or the construct of claim 62 or 68, wherein at least one occurrence of A is a carbohydrate determinant having the structure:



wherein each occurrence of R' is independently hydrogen or a protecting group; and  
 wherein R'' is hydrogen or a nitrogen protecting group.

74. The construct of claim 62 having the structure:



wherein R<sub>A</sub>, R<sub>B</sub> and R<sub>C</sub> are each independently H or methyl;

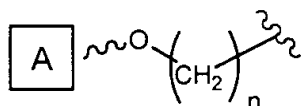
m is 1, 2, 3 or 4;

v is 1-8;

t is 1-8; and

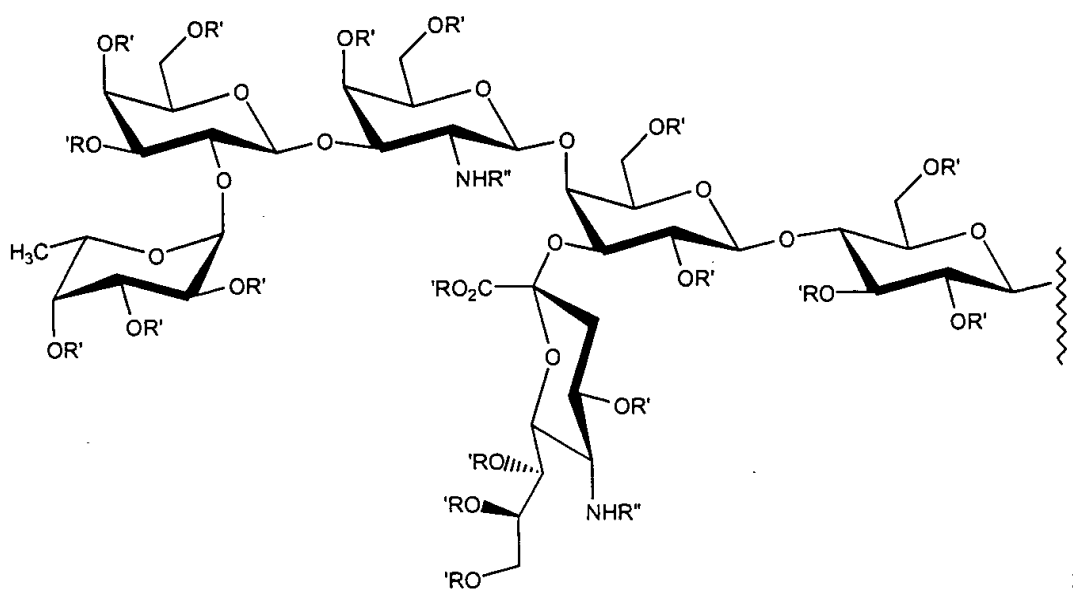
the carrier is a protein;

wherein each occurrence of R<sub>D</sub>, R<sub>E</sub> and R<sub>F</sub> is independently an alkyl glycosidic moiety  
 having the structure:

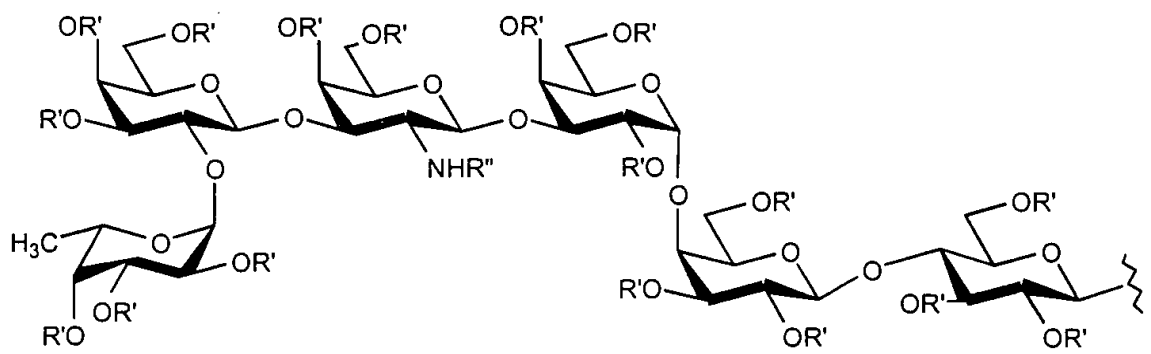


wherein n is 0-9;

each occurrence of A is independently a carbohydrate domain selected from the group  
 consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, or  
 TF, a carbohydrate domain having the structure:



or a carbohydrate domain having the structure:



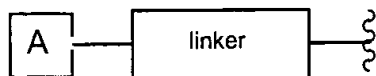
wherein each occurrence of  $R'$  is independently hydrogen or a protecting group; and wherein  $R''$  is hydrogen or a nitrogen protecting group

whereby, if for each occurrence of  $n$ ,  $n = 0$ , at least one occurrence of  $A$  has a different structure from other occurrences of  $A$ ; and wherein the  $n$ -alkyl glycosidic moiety is either  $\alpha$ - or  $\beta$ -linked to an amino acid.

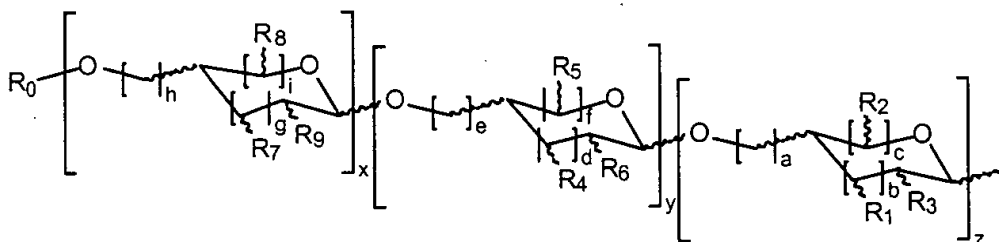
75. The construct of claim 74, wherein the protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

76. A pharmaceutical composition comprising:  
one or more immunological adjuvants and/or a pharmaceutically suitable carrier; and

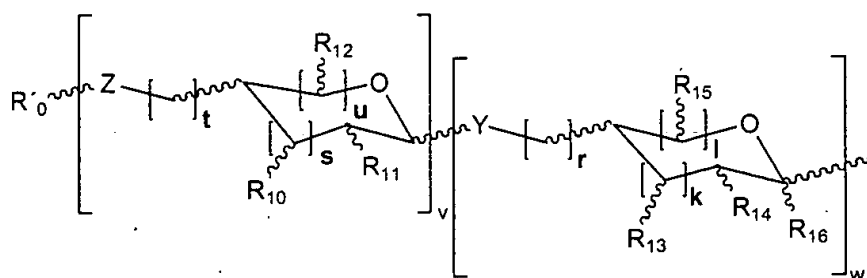
a multi-antigenic glycopeptide comprising a peptidic backbone made up of two or more amino acids, wherein each of said amino acids is independently substituted with a glycosidic moiety having the structure:



wherein the linker is a substituted or unsubstituted aliphatic or heteroaliphatic moiety; each occurrence of A is a carbohydrate determinant having the structure:



wherein a, b, c, d, e, f, g, h, i, x, y and z are independently 0, 1, 2 or 3, with the proviso that the x, y and z bracketed structures represent furanose or pyranose moieties and the sum of b and c is 1 or 2, the sum of d and f is 1 or 2, and the sum of g and i is 1 or 2, and with the proviso that x, y and z are not simultaneously 0; wherein  $R_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  is independently hydrogen, OH,  $OR^i$ ,  $NHR^i$ ,  $NHCOR^i$ , F,  $CH_2OH$ ,  $CH_2OR^i$ , a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R^i$  is independently hydrogen, CHO,  $COOR^{ii}$ , or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group or a saccharide moiety having the structure:

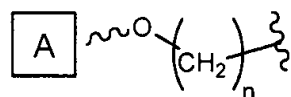


wherein Y and Z are independently NH or O; wherein k, l, r, s, t, u, v and w are each

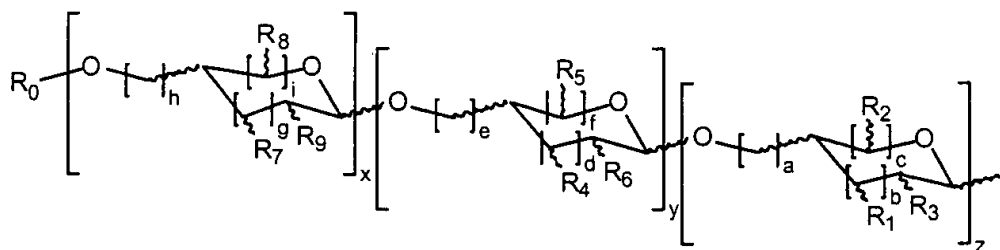
independently 0, 1 or 2; with the proviso that the v and w bracketed structures represent furanose or pyranose moieties and the sum of l and k is 1 or 2, and the sum of s and u is 1 or 2, and with the proviso that v and w are not simultaneously 0; wherein  $R'_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $R_{15}$  is independently hydrogen, OH,  $OR^{iii}$ ,  $NHR^{iii}$ ,  $NHCOR^{iii}$ , F,  $CH_2OH$ ,  $CH_2OR^{iii}$ , or a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R_{16}$  is hydrogen, COOH,  $COOR^{ii}$ ,  $CONHR^{ii}$ , a substituted or unsubstituted linear or branched chain alkyl or aryl group; wherein each occurrence of  $R^{iii}$  is hydrogen, CHO,  $COOR^{iv}$ , or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group; and wherein each occurrence of  $R^{ii}$  and  $R^{iv}$  are each independently H, or a substituted or unsubstituted linear or branched chain alkyl, arylalkyl or aryl group;

wherein each occurrence of n is independently 0-9, whereby, if for each occurrence of n, n = 0, at least one occurrence of A has a different structure from other occurrences of A.

77. The pharmaceutical composition of claim 76 wherein one or more of said amino acids are substituted with an n-alkyl glycosidic moiety having the structure:

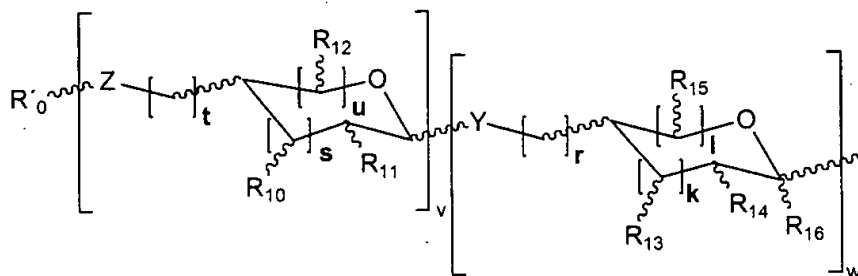


wherein each occurrence of A is a carbohydrate determinant having the structure:



wherein a, b, c, d, e, f, g, h, i, x, y and z are independently 0, 1, 2 or 3, with the proviso that the x, y and z bracketed structures represent furanose or pyranose moieties and the sum of b and c is 1 or 2, the sum of d and f is 1 or 2, and the sum of g and i is 1 or 2, and with the proviso that x, y and z are not simultaneously 0; wherein  $R_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  is independently hydrogen, OH,  $OR^i$ ,  $NHR^i$ ,  $NHCOR^i$ , F,  $CH_2OH$ ,  $CH_2OR^i$ , a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or

tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R^i$  is independently hydrogen, CHO, COOR<sup>ii</sup>, or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group or a saccharide moiety having the structure:



wherein Y and Z are independently NH or O; wherein k, l, r, s, t, u, v and w are each independently 0, 1 or 2; with the proviso that the v and w bracketed structures represent furanose or pyranose moieties and the sum of l and k is 1 or 2, and the sum of s and u is 1 or 2, and with the proviso that v and w are not simultaneously 0; wherein R'<sub>0</sub> is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of R<sub>10</sub>, R<sub>11</sub>, R<sub>12</sub>, R<sub>13</sub>, R<sub>14</sub> and R<sub>15</sub> is independently hydrogen, OH, OR<sup>iii</sup>, NHR<sup>iii</sup>, NHCOR<sup>iii</sup>, F, CH<sub>2</sub>OH, CH<sub>2</sub>OR<sup>iii</sup>, or a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of R<sub>16</sub> is hydrogen, COOH, COOR<sup>ii</sup>, CONHR<sup>ii</sup>, a substituted or unsubstituted linear or branched chain alkyl or aryl group; wherein each occurrence of R<sup>iii</sup> is hydrogen, CHO, COOR<sup>iv</sup>, or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group; and wherein each occurrence of R<sup>ii</sup> and R<sup>iv</sup> are each independently H, or a substituted or unsubstituted linear or branched chain alkyl, arylalkyl or aryl group;

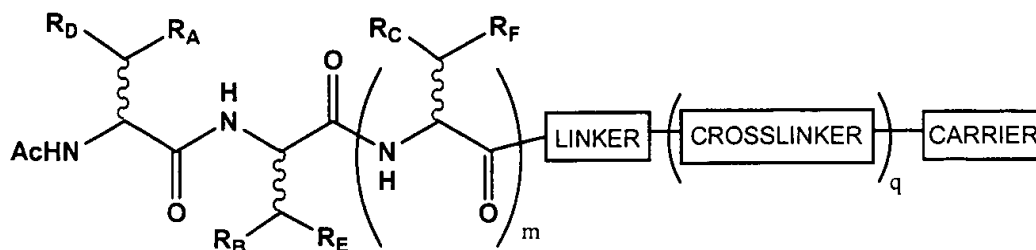
wherein the n-alkyl glycosidic moiety is either α- or β-linked to an amino acid.

78. The pharmaceutical composition of claim 76 or 77 wherein the glycopeptide is bound to a suitable carrier protein or lipid.

79. The pharmaceutical composition of claim 78 wherein the carrier protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

80. The pharmaceutical composition of claim 78 wherein the lipid is tripalmitoyl-S-glycerylcysteinylserine.

81. The pharmaceutical composition of claim 77, wherein said glycopeptide is a construct having the structure:



wherein the linker is either a free carboxylic acid, (carboxamido)alkyl carboxamide, MBS, primary carboxamide, mono- or dialkyl carboxamide, mono- or diarylcarboxamide, linear or branched chain (carboxy)alkyl carboxamide, linear or branched chain (alkoxycarbonyl)alkylcarboxamide, linear or branched chain (carboxy)arylalkylcarboxamide, linear or branched chain (alkoxycarbonyl)alkylcarboxamide, an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester;

wherein the crosslinker is a moiety derived from a crosslinking reagent capable of conjugating a surface amine of the carrier with a terminal thiol of the linker;

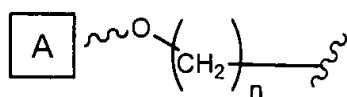
wherein the carrier is a protein or lipid;

wherein  $m$  is 1, 2, 3 or 4;

wherein  $q$  is 0 or 1;

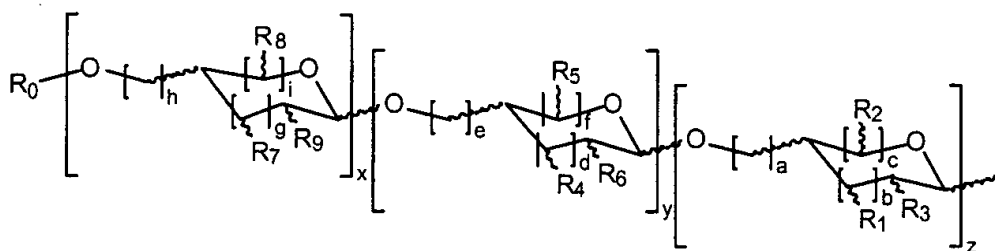
wherein each occurrence of  $R_A$ ,  $R_B$  and  $R_C$  is independently H or methyl; and

wherein each occurrence of  $R_D$ ,  $R_E$  and  $R_F$  is independently an alkyl glycosidic moiety having the structure:

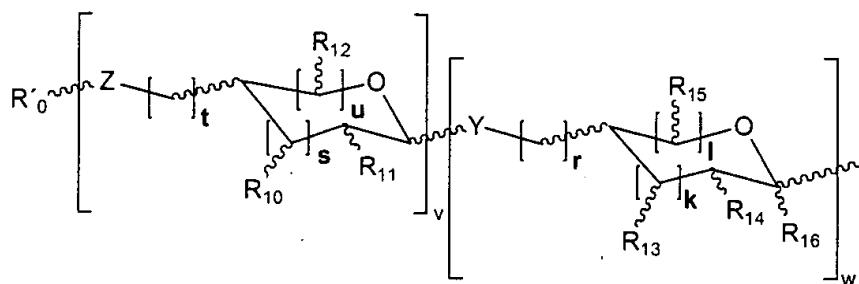


wherein each occurrence of  $A$  is independently selected from a carbohydrate domain having the structure:





wherein a, b, c, d, e, f, g, h, i, x, y and z are independently 0, 1, 2 or 3, with the proviso that  $R_D$ ,  $R_E$  and  $R_F$  are carbohydrates independently comprised of furanose or pyranose moieties, and the sum of b and c is 1 or 2, the sum of d and f is 1 or 2, and the sum of g and i is 1 or 2, and with the proviso that x, y and z are not simultaneously 0; wherein  $R_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  is independently hydrogen, OH,  $OR^i$ ,  $NHR^i$ ,  $NHCOR^i$ , F,  $CH_2OH$ ,  $CH_2OR^i$ , a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R^i$  is independently hydrogen, CHO,  $COOR^{ii}$ , or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group or a saccharide moiety having the structure:



wherein Y and Z are independently NH or O; wherein k, l, r, s, t, u, v and w are each independently 0, 1 or 2; with the proviso that the v and w bracketed structures represent furanose or pyranose moieties and the sum of l and k is 1 or 2, and the sum of s and u is 1 or 2, and with the proviso that v and w are not simultaneously 0; wherein  $R'_0$  is hydrogen, a linear or branched chain alkyl, acyl, arylalkyl or aryl group; wherein each occurrence of  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $R_{15}$  is independently hydrogen, OH,  $OR^{iii}$ ,  $NHR^{iii}$ ,  $NHCOR^{iii}$ , F,  $CH_2OH$ ,  $CH_2OR^{iii}$ , or a substituted or unsubstituted linear or branched chain alkyl, (mono-, di- or tri)hydroxyalkyl, (mono-, di- or tri)acyloxyalkyl, arylalkyl or aryl group; wherein each occurrence of  $R_{16}$  is hydrogen, COOH,  $COOR^{ii}$ ,  $CONHR^{ii}$ , a substituted or unsubstituted linear or branched chain alkyl or aryl group;

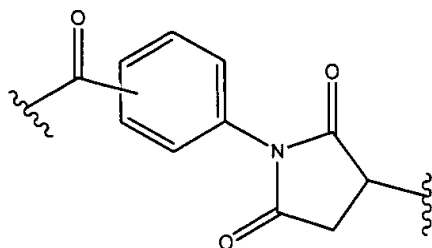
wherein each occurrence of  $R^{iii}$  is hydrogen, CHO, COOR<sup>iv</sup>, or a substituted or unsubstituted linear or branched chain alkyl, acyl, arylalkyl or aryl group; and wherein each occurrence of  $R^{ii}$  and  $R^{iv}$  are each independently H, or a substituted or unsubstituted linear or branched chain alkyl, arylalkyl or aryl group;

wherein each occurrence of n is independently 0-9, whereby, if for each occurrence of n, n = 0, at least one occurrence of A has a different structure from other occurrences of A; and wherein the n-alkyl glycosidic moiety is either  $\alpha$ - or  $\beta$ -linked to an amino acid.

82. The pharmaceutical composition of claim 81 wherein the linker is -O-, -NR<sub>G</sub>-, -NR<sub>G</sub>(aliphatic)NR<sub>J</sub>-, -NR<sub>G</sub>(heteroaliphatic)NR<sub>J</sub>-, -(aliphatic)NR<sub>J</sub>-, -(heteroaliphatic)NR<sub>J</sub>-, -O(aliphatic)NR<sub>J</sub>-, -O(heteroaliphatic)NR<sub>J</sub>-, -NR<sub>G</sub>(aliphatic)NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -NR<sub>G</sub>(heteroaliphatic)NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -(aliphatic)NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -(heteroaliphatic)NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -O(aliphatic)NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -O(heteroaliphatic)NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester, wherein each occurrence of k is independently 1-5; wherein each occurrence of R<sub>G</sub>, R<sub>H</sub>, R<sub>I</sub> or R<sub>J</sub> is independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic moiety, or a substituted or unsubstituted aryl moiety, and wherein each aliphatic or heteroaliphatic moiety is independently substituted or unsubstituted, linear or branched, cyclic or acyclic.

83. The pharmaceutical composition of claim 81, wherein the linker is -O-, -NR<sub>G</sub>(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>-, -NR<sub>G</sub>(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>(C=O)(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>S-, -NR<sub>G</sub>-, -(CR<sub>H</sub>R<sub>J</sub>)<sub>k</sub>NR<sub>I</sub>-, -O(CR<sub>H</sub>R<sub>I</sub>)<sub>k</sub>NR<sub>J</sub>-, an oligoester fragment comprising from 2 to about 20 hydroxy acyl residues, a peptidic fragment comprising from 2 to about 20 amino acyl residues, or a linear or branched chain alkyl or aryl carboxylic ester, wherein each occurrence of k is independently 1-5, wherein each occurrence of R<sub>G</sub>, R<sub>H</sub>, R<sub>I</sub> or R<sub>J</sub> is independently hydrogen, a linear or branched, substituted or unsubstituted, cyclic or acyclic moiety, or a substituted or unsubstituted aryl moiety.

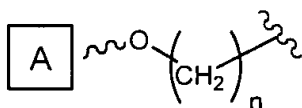
84. The pharmaceutical composition of claim 81, wherein the crosslinker is a fragment having the structure:



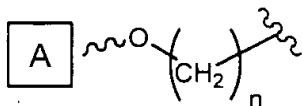
whereby said structure is generated upon conjugation of maleimidobenzoic acid N-hydroxy succinimide ester with a linker.

85. The pharmaceutical composition of claim 81, wherein m is 1 and the construct has three occurrences of A comprising Tn, Globo-H and Le<sup>y</sup>.

86. The pharmaceutical composition of claim 77, wherein the glycopeptide has six occurrences of the alkyl glycosidic moiety having the structure:



87. The pharmaceutical composition of claim 81, wherein m is 4 and the construct has six occurrences of the alkyl glycosidic moiety having the structure:

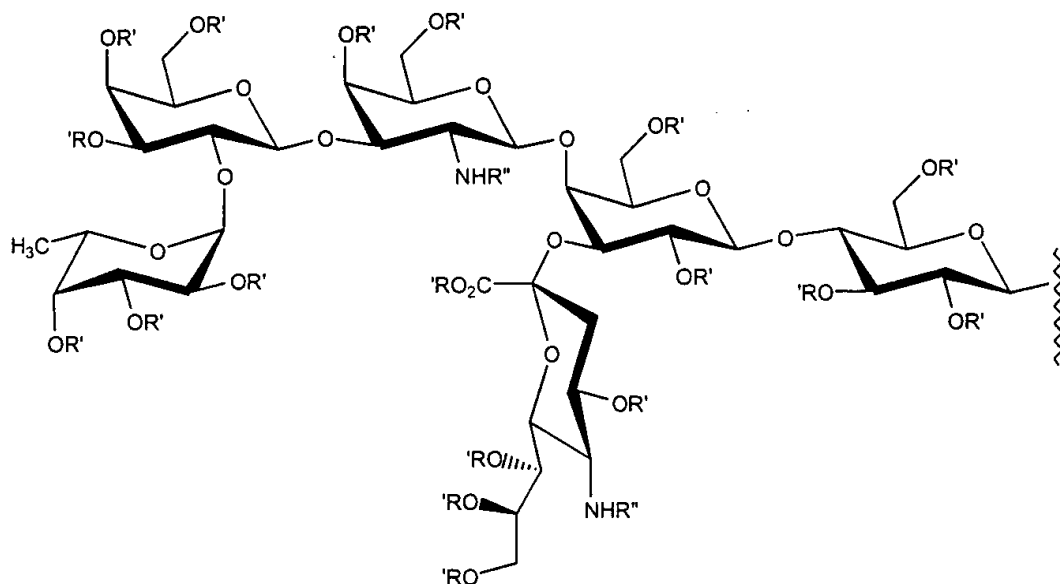


88. The pharmaceutical composition of claim 77, 81, 85 or 86, wherein each occurrence of A is independently Globo-H, fucosyl GM1, KH-1, glycophorin, STN, Le<sup>y</sup>, N3, Tn, 2,6-STn, (2,3)ST, or TF.

89. The pharmaceutical composition of claim 81 or 86 wherein the carrier is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

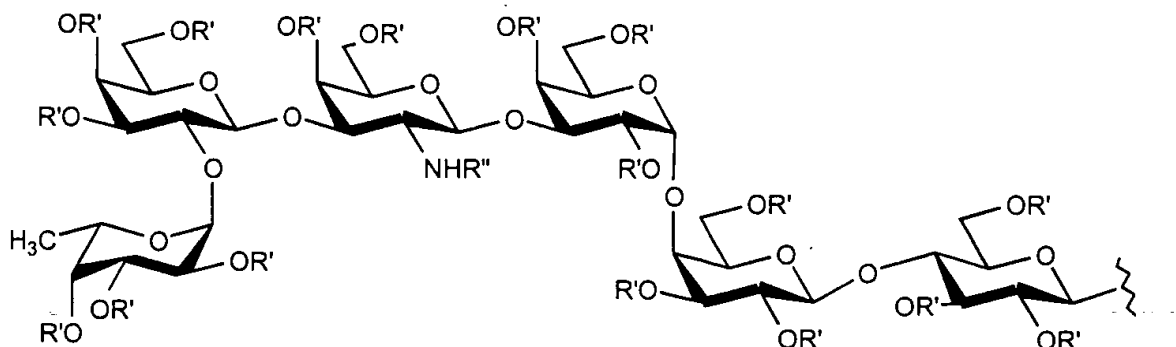
90. The pharmaceutical composition of claim 81 or 86 wherein the carrier is tripalmitoyl-S-glycerylcysteinylserine.

91. The pharmaceutical composition of claim 77, 81, 85 or 86, wherein at least one occurrence of A is a carbohydrate determinant having the structure:



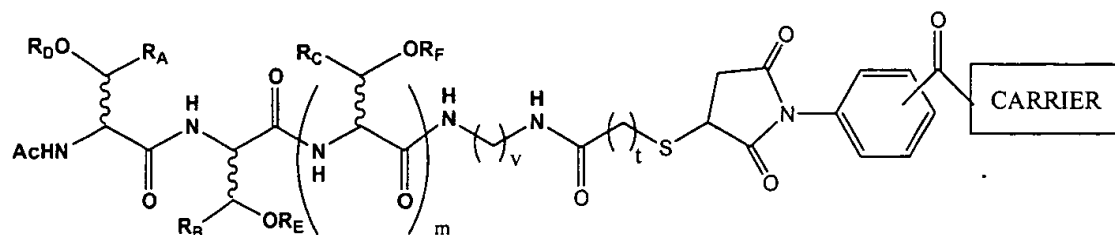
wherein each occurrence of  $R'$  is independently hydrogen or a protecting group; and  
wherein each occurrence of  $R''$  is independently hydrogen or a nitrogen protecting group.

92. The pharmaceutical composition of claim 77, 81, 85 or 86, wherein at least one occurrence of A is a carbohydrate determinant having the structure:



wherein each occurrence of  $R'$  is independently hydrogen or a protecting group; and  
wherein  $R''$  is hydrogen or a nitrogen protecting group.

93. The pharmaceutical composition of claim 80, wherein the construct has the structure:



wherein  $R_A$ ,  $R_B$  and  $R_C$  are each independently H or methyl;

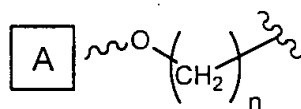
$m$  is 1, 2, 3 or 4;

$v$  is 1-8;

$t$  is 1-8; and

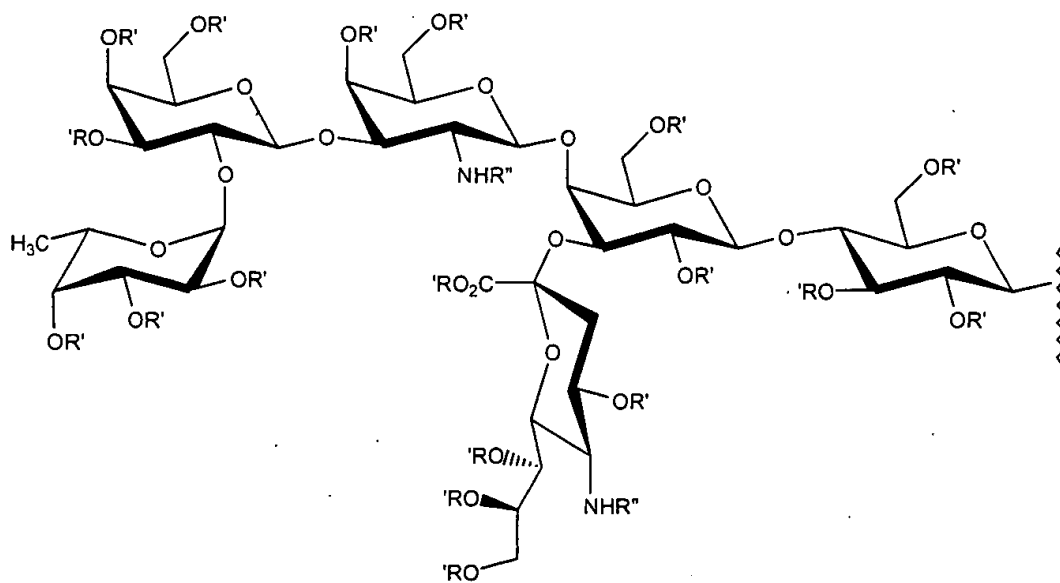
the carrier is a protein;

wherein each occurrence of  $R_D$ ,  $R_E$  and  $R_F$  is independently an alkyl glycosidic moiety having the structure:

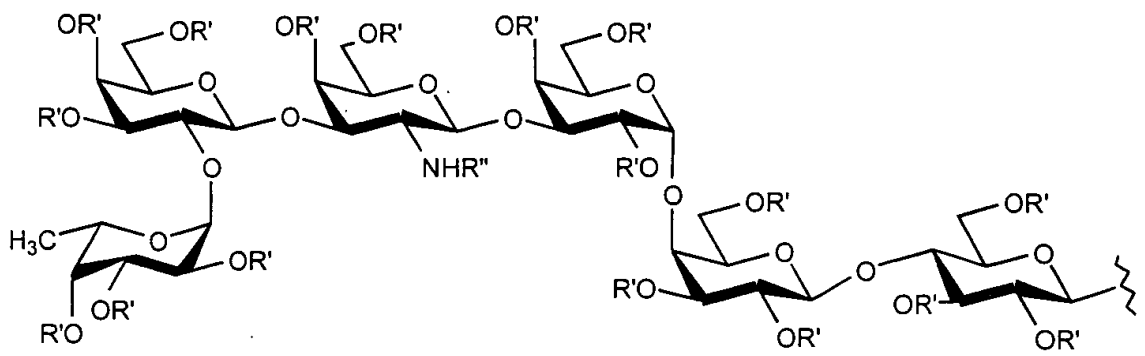


wherein  $n$  is 0-9;

each occurrence of  $A$  is independently a carbohydrate domain selected from the group consisting of Globo-H, fucosyl GM1, KH-1, glycophorin, STN,  $Le^x$ , N3, Tn, 2,6-STn, (2,3)ST, or TF, a carbohydrate domain having the structure:



or a carbohydrate domain having the structure:



wherein each occurrence of R' is independently hydrogen or a protecting group; and

wherein R'' is hydrogen or a nitrogen protecting group

whereby, if for each occurrence of n, n = 0, at least one occurrence of A has a different structure from other occurrences of A; and wherein the n-alkyl glycosidic moiety is either  $\alpha$ - or  $\beta$ -linked to an amino acid.

94. The pharmaceutical composition of claim 93, wherein the protein is bovine serum albumin, polylysine or keyhole limpet hemocyanin.

95. The pharmaceutical composition of claim 77 wherein at least one of said one or more immunological adjuvants is a saponin adjuvant.

96. The pharmaceutical composition of claim 95 wherein the saponin adjuvant is GPI-0100.

97. The pharmaceutical composition of claim 77 wherein at least one of said one or more immunological adjuvants is bacteria or liposomes.

98. The pharmaceutical composition of claim 97 wherein the immunological adjuvant is *Salmonella minnesota* cells, bacille Calmette-Guerin or QS21.